

What is Claimed:

1 1. A safety device for use with an electric apparatus, the safety
2 device comprising:

3 a housing;

4 at least two terminals disposed at least partially within the housing;

5 a cord set having at least two conductors, a first end of the two
6 conductors mounted at least partially within the housing;

7 a non-replaceable circuit interrupter disposed within the housing so as
8 to be inaccessible to a user and coupled between i) one of the at least two terminals
9 and ii) one of the at least two conductors of the cord set; and

10 at least one control component electrically connected to one of the at
11 least two conductors.

1 2. The safety device according to claim 1, wherein the at least one
2 control component is disposed within the housing for controlling an operation of the
3 electrical apparatus.

1 3. The safety device according to claim 2, wherein the at least one
2 control component is coupled between a power source and the non-replaceable
3 circuit interrupter.

1 4. The safety device according to claim 2, wherein the non-
2 replaceable circuit interrupter is coupled between a power source and the at least
3 one control component.

1 5. The safety device according to claim 1, wherein at least a
2 portion of the at least two conductors are coupled between the first housing and a
3 second housing located proximate the first housing; and

4 the at least one additional control component is disposed within the
5 second housing for controlling an operation of the electrical apparatus.

1 6. The safety device according to claim 1, wherein the at least one
2 control component comprises at least one of:

- 3 i) a switch;
4 ii) a timer;
5 iii) a transformer;
6 iv) a passive electrical device;
7 v) an active electrical device; and
8 vi) a circuit breaker.

9 7. The safety device according to claim 1, wherein the non-
10 replaceable circuit interrupter is one of i) a non-ressettable circuit interrupter, ii) an
11 arc-fault circuit interrupter, and iii) a resettable circuit interrupter.

1 8. The safety device according to claim 1, wherein the non-
2 replaceable circuit interrupter is a fuse.

1 9. The safety device according to claim 8, wherein the fuse is one
2 of a i) a slow-blow fuse, ii) a fast-blow fuse.

1 10. The safety device according to claim 1, wherein a rating of the
2 non-replaceable circuit interrupter is based on at least one of:

- 3 an inrush current of the electrical apparatus,
4 a steady state load of the electrical apparatus,

5 load spikes based on operational conditions of the electrical apparatus,
6 and

7 an auto transformer effect of the electrical apparatus.

1 11. The safety device according to claim 1, wherein the electrical
2 apparatus comprises one of:

3 at least one motor, wherein the motor is one of i) a single speed
4 motor, ii) a multi speed motor, and iii) a variable speed motor

5 at least one light; and

6 a plurality of series connected lights.

1 12. The safety device according to claim 1, wherein the non-
2 replaceable circuit interrupter is electrically coupled between i) one of the at least
3 two terminals and ii) one of the at least two conductors of the cord set.

1 13. The safety device according to claim 1, wherein the non-
2 replaceable circuit interrupter is electrically and physically coupled between i) one of
3 the at least two terminals and ii) one of the at least two conductors of the cord set.

1 14. The safety device according to claim 1, further comprising
2 means for determining a status of the non-replaceable circuit interrupter.

1 15. A safety device for use with an electric apparatus, the safety
2 device comprising:

3 a first housing;

4 at least two terminals disposed at least partially within the first
5 housing;

6 a cord set having at least two conductors, a first end of the at least
7 two conductors mounted at least partially within the first housing, the at least two
8 conductors connected to the at least two terminals and exiting the first housing;

9 a second housing located proximate the first housing, the at least two
10 conductors coupled between the first housing and the second housing; and

11 a non-replaceable circuit interrupter disposed within the second
12 housing so as to be inaccessible to a user and connected in series with at least one of
13 the at least two conductors of the cord set.

1 16. The safety device according to claim 15, wherein the non-
2 replaceable circuit interrupter includes at least two non-replaceable circuit
3 interrupters, a first one of the non-replaceable circuit interrupters electrically
4 connected in series with one of the at least two conductors of the cord set, and a
5 second of the non replaceable circuit interrupters electrically connected in series with
6 a further one of the at least two conductors of the cord set.

1 17. The safety device according to claim 15, further comprising at
2 least one of:

3 i) a transparent portion in the second housing to permit viewing
4 of a status of the non-replaceable circuit interrupter,

5 ii) a portion of the second housing comprising a polymer
6 reactive to a thermal condition of the non-replaceable circuit interrupter, and

7 iii) an illumination device coupled to the non replaceable circuit
8 interrupter and disposed within the second housing to indicate a status of the non-
9 replaceable circuit interrupter.

1 18. A safety device for use with an electric apparatus, the safety
2 device comprising:

3 a housing;

4 at least two terminals disposed at least partially within the housing;

5 a cord set having at least two conductors, a first end of the at least

6 two conductors mounted at least partially within the housing and connected to

7 respective ones of the at least two terminals, the at least two conductors exiting the

8 housing; and

9 a non-replaceable circuit interrupter i) located proximate the housing,

10 ii) disposed within a portion of the cord set and iii) connected in series with one of

11 the at least two conductors of the cord set;

12 wherein the non-replaceable circuit interrupter is disposed within the

13 cord set so as to be inaccessible to a user.

1 19. The safety device according to claim 18, wherein the non-

2 replaceable circuit interrupter includes at least two non-replaceable circuit

3 interrupters, a first one of the non-replaceable circuit interrupters electrically

4 connected in series with one of the at least two conductors of the cord set, and a

5 second of the non replaceable circuit interrupters electrically connected in series with

6 a further one of the at least two conductors of the cord set.

1 20. A method for enhancing the safety of an electrical apparatus,

2 the method comprising the steps of:

3 providing a non-replaceable circuit interrupter one of within and

4 proximate a cord set plug for connecting the electrical apparatus to a source of

5 power, the non-replaceable circuit interrupter coupled between the source of power

6 and the electrical apparatus; and

7 determining a size of the non-replaceable circuit interrupter based on a

8 load characteristic of the electrical apparatus,

9 wherein a time period and/or magnitude of compromised safety caused
10 by an electrical fault occurring at least one of i) between said non-replaceable circuit
11 interrupter and said electrical apparatus and ii) within said electrical apparatus is
12 reduced.